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Reactions of euro area government yields to Covid-19 related policy measure announcements by the European Commission and the European Central Bank

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ABSTRACT

This paper evaluates the impact of announcements of Covid-19 related monetary and fiscal policy measures by the European Central Bank and the European Commission. Applying an event study, we find that the announcements predominantly affect the government bond yields of more solvent countries such as Germany and the Netherlands. Since this finding mainly holds for the announcements of fiscal measures, we conclude that the investors are primarily concerned about the future fiscal burden that has to be shouldered by those solvent countries within the euro area.

1. Introduction

The outbreak of the Covid-19 pandemic has severely hit economies around the world and has triggered ample policy responses. In addition to individual national policy measures, the European Central Bank (ECB) and the European Commission (EC) have undertaken unprecedented steps to support recovery of the economies in the euro area. This letter investigates the immediate impact of those monetary and fiscal policy measure announcements on the government bond market in the euro area. The reaction of government bond yields can be seen as the first element in monetary policy transmission mechanism as well as investors' perception regarding the ability of the fiscal authority to cope with the crisis by introducing fiscal policy packages. In particular, the yield responses seize investors' confidence in future fiscal space and capacity, which in turn determines the risk premium for the government bonds.

This letter is closely related to Fendel and Neugebauer (2020), who among others[1] look at short-term responses of government bond yields with respect to announcements of unconventional monetary policy measures of the ECB by employing event study techniques. In order to assure comparability with previous results from this strand of the literature, our event study employs the same methodology

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[1] See for example Afonso et al. (2020), Altavilla et al. (2019), Ambler and Rumler (2019), Urbschat and Watzka (2020).

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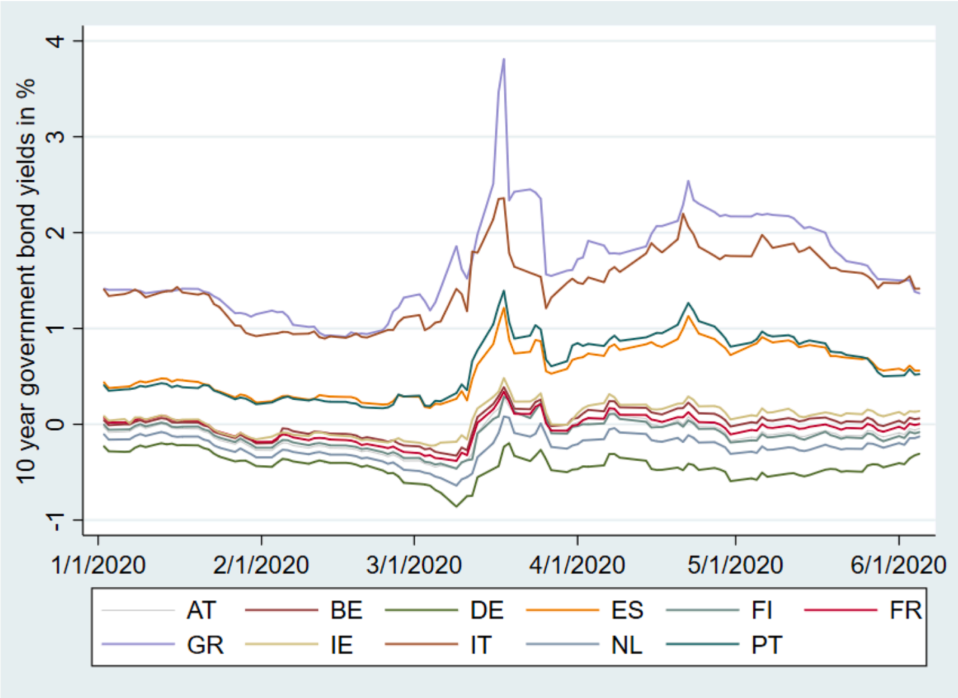

Fig. 1. Country-specific 10-years sovereign yields
Source: Datastream.

and data set (among them the control variables) as Fendel and Neugebauer (2020) for the Covid-19 pandemic period. Only the set of events changes from ECB announcements on unconventional monetary policy to Covid-19 related announcements by the ECB and the EC (including the related entities of the Eurogroup and the European Stability Mechanism). In line with Afonso et al. (2020), we consider both fiscal and monetary policy announcements, as they are crucial for developments in financial markets and in particular for the government bond markets.

Only very few papers have examined this issue so far. Klose and Tillmann (2020) examine the reaction of stock market prices as well as bond yields in European countries in the pandemic and find significant effects. In contrast to our analysis, they look at national measures and European-wide measures in a pure panel setting and do not report results for individual countries. Further, their sample period ends on April 24, 2020 and thus excludes important events such as the economic stimulus package "Next Generation EU" announced on May 27, 2020. D'Orazio and Dirks (2020) investigate the impact of several Covid-19 related measures such as the imposed lockdowns on the euro area stock markets. They do not include the events we are examining and the bond prices only appear as explanatory variables for explaining the stock price movements. Hartley and Rebucci (2020) consider 24 Covid-19 related announcements of 21 central banks and find significant effects on local 10-year government bond yields. In comparison, our study focuses on the euro area and jointly evaluates fiscal announcements, which should be of no less importance. Andrieş et al. (2020) assess the impact of the pandemic in general on sovereign CDS spreads in Europe by looking at the cumulative abnormal changes in bond prices. They do not concentrate on monetary and fiscal measures. Delatte and Guillaume (2020) analyze the effects of a set of various policy measures in the euro area announced during the pandemic period including both fiscal and monetary measures. In contrast to our study, they only analyze sovereign bond yield spreads and find, for example, that Italy benefited the most from the policy interventions by a significant reduction in the Italian yield spread. We explicitly show below, that such a simplified analysis of only spreads (as opposed to level effects) might lead to a crucial misinterpretation.

The rest of the letter is structured as follows. Section 2 introduces the data set employed. Section 3 explains the underlying regression model. Section 4 presents the results, and Section 5 concludes.

2. Data

The data set includes eleven euro area countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, and Spain. The sample period runs from January 1, 2020 until July 31, 2020. Our main variables of interest are the 10-year government bond yields, which are usually chosen for that kind of studies. Fig. 1 displays their development over the

Table 1
Reactions of sovereign yields to Covid-19-related announcements.

Country	Yield levels all 20 events	6 ECB events	14 EC events	Yield spreads all 20 events	6 ECB events	14 EC events
AT	2.39**	1.04	3.03**	0.05	-0.13	0.13
BE	1.93*	1.41	2.17**	-0.37	-0.14	-0.47
DE	2.63**	1.87	2.97***			
ES	0.21	1.30	-0.27	-2.59**	-0.66	-3.37
FI	2.13*	0.80	2.74**	-0.27	-0.39	-0.22
FR	2.06**	1.21	2.44**	-0.61	-0.72	-0.56
GR	-3.67	11.50	-10.60	-5.94	9.62	-13.00
IE	2.13**	1.52	2.40**	-0.44	0.32	-0.75
IT	-3.20	1.56	-5.28	-6.16**	-1.45	-8.17**
NL	2.07**	0.45	2.77***	-0.65	-1.60*	-0.23
PT	-0.22	0.98	-0.766	-2.73**	-0.55	-3.66*

Notes: For the sake of simplicity, only the estimated coefficients of $Covid_t$ are displayed. They are displayed in basis point (i.e., multiplied by the factor 100) to ease legibility. *, **, and *** denote a significance at the 10, 5, and 1 percent level, respectively.

sample period. The yields show a similar pattern, for instance they all peak in March 2020 when the Covid-19 cases spread quickly in Europe.

Our event set includes 20 Covid-19 related announcement dates, which are listed and described in Table A1 in the Appendix.[2] Six announcements are from the ECB and, thus, are related to monetary policy measures ("ECB events" thereafter). The most prominent event among these six is the announcement of the Pandemic Emergency Purchase Programme (PEPP) worth 750 billion euro on March 18, 2020. The remaining 14 announcements are policy announcements from the EC respectively from the Eurogroup or the European Stability Mechanism (ESM) such as the economic stimulus package "Next Generation EU" from May 27, 2020. These 14 announcements are fiscal measures and for the sake of simplicity we subsequently refer to them as "EC events".

3. Regression model

To ensure comparability with previous studies, we employ the identical event study set up as in Fendel and Neugebauer (2020) giving the following linear regression model:

$$\Delta y_t = \alpha + \beta Covid_t + \gamma \Delta y_{t-1} + \delta X_t + \varepsilon_t, \tag{1}$$

where $\Delta y_t = y_t - y_{t-1}$ represents the daily change in the yield rates of government bonds with a maturity of 10 years, and α is the constant. The dummy variable $Covid_t$ is the variable of interest. It is set equal to one on days when the Covid-19 related announcement (s) took place, and zero otherwise. Following Urbschat and Watzka (2020) we include the first lag Δy_{t-1} as control variable. Further control variables, which have proved to be of particular information content, are included in the vector X_t: country-specific stock market indices, the Citigroup Economic Surprise Index for the Eurozone, the 3-month Euribor future rate, the VIX, the US-$/Euro spot exchange rate, and the 10-year US Treasury Inflation-Protected Securities yield rates.[3]

Eq. (1) is estimated using the ordinary least squares estimator for each country individually. We use Newey-West standard errors. In a variant of Eq. (1), we alternatively regress the dummy and the controls on the changes in the spread of the yields relative to the German yield (instead of the change in the yield levels). Both variants (level changes and spread changes) are additionally set up as a panel model, which we estimate using a country fixed effects estimator.

4. Results

Table 1 presents the results for individual countries both for the changes in the yield level (left part) as well as for the changes in the spread (i.e., yield difference to German government bonds; right part). For convenience, we have transformed the original coefficients into basis points.

From Table 1, we see that the dummy covering all events under consideration (first column) significantly increases the yield levels in only seven out of the eleven countries: Austria, Belgium, Germany, Finland, France, Ireland and the Netherlands. Interestingly, these countries are considered as the euro area member countries with a more sustainable debt burden and a more sound fiscal position. This observation suggests the interpretation that financial markets may consider the future financing aspects of main relevance, which puts a burden on this particular set of countries that have sustainable fiscal positions. This interpretation is supported when differentiating between EC and ECB events: The 14 EC events (third column) seem to be the main driver of these results. If the dummy variable covers

[2] We made sure that the chosen euro area wide announcements did not conflict with national measures on the very same day, which might disturb the country-specific results. As can be seen in Table A1, on some event days more than one announcement from more than one institution took place.

[3] An in-depth discussion of the rationale of single control variables can be found in Fendel and Neugebauer (2020). Data sources are Datastream and Refinitiv.

Table 2
Reactions of sovereign yields to Covid-19-related announcements in a panel setting.

Country group	Yield levels *all 20 events*	*6 ECB events*	*14 EC events*	Yield spreads *all 20 events*	*6 ECB events*	*14 EC events*
All	0.68	1.39*	0.36	-2.13**	-0.27	-2.96*
rest	2.16***	1.13***	2.64***	-1.44	-1.15**	-1.56
south	-1.95	2.79	-4.09	-3.16*	1.28	-5.12

Notes: For the sake of simplicity, only the estimated coefficients of $Covid_t$ are displayed. They are displayed in basis point (i.e., multiplied by the factor 100) to ease legibility. *, **, and *** denote a significance at the 10, 5, and 1 percent level, respectively.

Table A1
Crucial policy announcements by the ECB and the EC.

Date	Event
04.06.2020	PEPP increased by € 600 billion
03.06.2020	Adjustment of EU budget to make € 11.5 billion available
27.05.2020	Economic stimulus package "Next Generation EU" with amount of € 750 billion
26.05.2020	EIB Board approves € 25 billion Pan-European Guarantee Fund in response to Covid-19 crisis
18.05.2020	Franco-German Proposal of fiscal measures: € 500 billion EUR recovery fund
15.05.2020	Declaration by the Eurogroup: "*As of today, Pandemic Crisis Support is operational. …*"
15.05.2020	Pandemic Crisis Support by the ESM of € 240 billion for the next 30 months
09.05.2020	Eurogroup Statement on the Pandemic Crisis Support
30.04.2020	Easing of TLTRO III operations, non-targeted pandemic emergency longer-term refinancing operations (PELTROs)
28.04.2020	Suggestion to ease banking regulation
22.04.2020	ECB Decision reinforces broader package of collateral easing measures adopted by the Governing Council on 7 April 2020, which will also remain in place until September 2021
09.04.2020	European Council confirms loans to support member states
07.04.2020	ECB announces package of temporary collateral easing measures
02.04.2020	€ 100 billion for SURE (**S**upport to mitigate **U**nemployment **R**isks in an **E**mergency)
02.04.2020	Coronavirus Response Investment Initiative Plus
02.04.2020	European Union Emergency Support Instrument (ESI) for the healthcare sector
23.03.2020	Declaration by the EU finance ministers on Stability and Growth Pact in the face of the Covid-19 crisis: the conditions for the application of the general escape clause of the budgetary policy EU framework – a severe economic downturn in the euro area or in the Union as a whole – are met
20.03.2020	ECB and other major central banks to offer 7-day US dollar operations on a daily basis
19.03.2020	Further easing measures by the EU commission
18.03.2020	ECB announces € 750 billion Pandemic Emergency Purchase Programme (PEPP), easing of collaterals
13.03.2020	EU-Commission: several fiscal measures
13.03.2020	Proposal of Coronavirus Response Investment Initiative
12.03.2020	Additional LTROs, additional € 120 billion for APP, more favorable conditions for TLTRO III
10.03.2020	EU-Commission: € 25 billion € for investment

Notes: More events than event dates exist since multiple announcements happened on March 13, April 2, and May 15. ECB event dates are highlighted in grey; the other events refer to EC policy measures.
Source: Press releases by the ECB, EC, and ESM.

fiscal announcements only the results turn to be statistically even more significant, whereas in case of a dummy covering only the 6 monetary measures (second column), the results do not show any significance.

For the complementary case of regressing the events on the change in the spread relative to the German yield level, we observe the interesting fact that for those countries with a less sustainable debt burden (Spain, Italy and Portugal) the spread decreases statistically significant. Only the Greek spread does not display a significant effect. In line with Delatte and Guillaume (2020), we find that the Italian spread observes the largest decline. However, from the previous results of the level regression, we can conclude that the reduction of the spreads is mainly driven by the significant increase in German yields and not so much by a decrease in the yield of the particular countries themselves. Consequently, the spread reduction in case of Italy should not be interpreted as a positive development in terms of more relaxed financing conditions for the Italian government resulting from the Covid-19 related measures. This particular finding shows the clear advantage of level regressions over spread regressions, since the latter could potentially lead to a misinterpretation about the underlying driver of the spread changes.

Pooling economies into a panel confirms the former findings (see Table 2). We also allocate the eleven countries into two subgroups: "south" (Greece, Italy, Portugal and Spain) and "rest" (Austria, Belgium, Germany, Finland, France, Ireland and the Netherlands).[4] For the level regression with all 20 events, we see that only the latter subgroup (again) displays a significant increase in yields. Interestingly, in the panel setup, the monetary announcements are also significant even for the complete panel of eleven

[4] This distinction is also supported by the data. The southern economies never had negative yields whereas the other countries do show negative yields during the sample period (compare Fig. 1).

countries (see row “all”). In the panel setting of the spread regression, a contradiction to the previous result seems to emerge. For all 20 events as well as the “EC events”, the spread declines significantly for the complete set of countries (row “all”) and the monetary announcements are also spread reducing for the more stable countries (row “rest”). However, the potential explanation is that in the spread regression of the panel setup Germany is not present in the latter subgroup anymore, since its government bond yields serve as the reference level for the yield differences (the spread). Also those countries whose yields increased (see results of the level regressions in Table 1) experience a spread reduction relative to Germany, because Germany experienced an even higher increase in its yields. Markets seem to place the biggest future financing burden on Germany.

Markets are presumably very sensitive to the national developments of the corona crisis. However, the results still hold when including the daily number of new Covid-19 cases per 100k inhabitants for each country as an additional control variable.

5. Conclusion

Our event study analysis has revealed that euro area government bond yields reacted significantly following the Covid-19 related announcements by the ECB and the EC. The spreads of high-debt countries declined. However, not because of a decrease in their yields themselves, but due to an increase in the yields of the more stable economies such as Austria, Germany, and the Netherlands. This is particularly true for the fiscal policy measure announcements. This result suggests that especially the financially stable countries are expected to carry most of the financing burden in the future and therefore their government bonds are traded with a higher premium.

The findings hint at an imbalance of yield reactions among euro area members to the common European-wide fiscal programs. A transition to a more integrated fiscal policy in the EU would mitigate such differences in the future. Complementary measures and reforms could support this process. Acharya et al., 2018 emphasize that sovereign bonds become riskier when their concentration in domestic banks increases. Finnerty and Gonzalez (2017) propose reforms of the European bank regulation to reduce the risk of undercapitalized banks and thereby also the fiscal burden expected by euro area members.

Appendix

Table A1

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